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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/734,101	12/11/2000	Benoit Ambroise	10244	3915

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EXAMINER	
VO, HAI	

ART UNIT	PAPER NUMBER
1771	

DATE MAILED: 05/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/734,101	AMBROISE ET AL.
	Examiner	Art Unit
	Hai Vo	1771

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 February 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1-10* is/are allowed.

6)☒ Claim(s) *11-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. The indicated allowability of claims 11 and 16 is withdrawn in view of the newly discovered reference(s) to Lundquist et al (US 4,731,304) and Ondeck et al (US 5,948,557). Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taskier (US 3,853,601) in view of Lundquist et al (US 4,731,304) and Yagi et al (US 5,948,519). Taskier teaches a hydrophilic microporous film comprising a hydrophobic microporous film and a surfactant coating of a silicon glycol copolymer which renders the coated microporous film hydrophilic (abstract). The porous film is an open-celled film wherein the pores are essentially interconnected through tortuous paths which may extend from one exterior surface to another (column 4, lines 5-13). Since Taskier is using the same coating process as Applicants to form a surface coating of a silicon glycol copolymer onto the microporous film (column 12, line 30 et seq.), it is the examiner's position that the pores of the film would substantially inherently impregnated with the silicon glycol copolymer. Taskier teaches the porous film made of a copolymer of ethylene and propylene (column 7, lines 50-65). Taskier does not specifically disclose the microporous film made of HDPE. Lundquist teaches that the microporous film for use in battery separators is

made of HDPE (example 1). Therefore, in the absence of unexpected results, it would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute the HDPE for copolymer of ethylene and propylene of the Taskier invention since two compounds have been shown in the art to recognized equivalent polymers for the microporous film useful as a battery separator.

Taskier discloses that the sequential cold stretching and hot stretching steps impart to the elastic film a unique open celled structure (column 5, lines 30-35). Taskier does not specifically disclose the microporous film containing an inorganic cavitating agent. The present invention requires the presence of inorganic particles for generation of the pores around them when the film is stretched. Therefore, it is necessary and thus obvious for the skilled artisan to look to the prior art for the presence of the inorganic cavitating agent in the microporous film. Lundquist teaches a microporous film for use in battery separator comprising an inorganic cavitating agent such as calcium carbonate (column 7, lines 8-10). The Lundquist microporous film is made of HDPE, inorganic cavitating agent, having a porosity and an average pore size within the ranges disclosed in the Taskier invention. Lundquist discloses a process that is equally capable of producing the microporous film using the inorganic cavitating agent. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute the process disclosed in the Lundquist invention (using the inorganic cavitating agent in the microporous film) for the process of the Taskier invention to prepare the microporous

film since two processes have been shown in the art to recognized equivalent process for producing the microporous film.

Taskier does not specifically disclose the multilayer product comprising two microporous film layers. Lunquist teaches a microporous film comprising a matrix that includes porous high density polyethylene, a net work of interconnecting pores communicating throughout the porous layer and a calcium carbonate cavitating agent (column 7, lines 8-10, 43 and column 10, lines 60-66). Lunquist teaches a battery separator comprising at least two microporous films bonded together by extrusion to form a unitary structure which is capable of maintaining its length and breath dimensions (column 3, lines 5-10, and column 10, lines 30-40). Such is important to the expectation of successfully practicing the invention of Taskier, thus suggesting the modification. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to form a multilayer product comprising two microporous films bonded together motivated by the desire to form a unitary structure which is capable of maintaining its length and breath dimensions.

Taskier discloses that the elastic film is cold stretched until porous surface regions or areas which are elongated normal or perpendicular to the stretch direction are formed and the cold stretched film is hot stretched until fibrils and pores or open cells which are elongated parallel to the stretch direction are formed (column 5, lines 8-14). Taskier does not specifically disclose the elastic film being biaxially oriented. Yagi teaches that a porous biaxially oriented film as a battery separator is formed

from ethylene-alpha-olefin copolymer and has excellent tensile strength (column 3, lines 5-10). This is important to the expectation of successfully practicing the invention of Taskier and thus suggesting the modification. Therefore, in the unexpected results, it would have been obvious to one having ordinary skill in the art at the time the invention was made to form a microporous film having a biaxial orientation motivated by the desire to impact the tensile strength of the microporous film.

4. Claims 11-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taskier (US 3,853,601) in view of Ondeck et al (US 5,948,557) and Yagi et al (US 5,948,519). Taskier teaches a hydrophilic microporous film comprising a hydrophobic microporous film and a surfactant coating of a silicon glycol copolymer which renders the coated microporous film hydrophilic (abstract). The porous film is an open-celled film wherein the pores are essentially interconnected through tortuous paths which may extend from one exterior surface to another (column 4, lines 5-13). Taskier discloses that the elastic film is cold stretched until porous surface regions or areas which are elongated normal or perpendicular to the stretch direction are formed and the cold stretched film is hot stretched until fibrils and pores or open cells which are elongated parallel to the stretch direction are formed (column 5, lines 8-14). This reads on Applicant's biaxially oriented film. Since Taskier is using the same coating process as Applicants to form a surface coating of a silicon glycol copolymer onto the microporous film (column 12, line 30 et seq.), it is the examiner's position that the pores of the film would substantially inherently

impregnated with the silicon glycol copolymer. Taskier teaches the porous film made of a copolymer of ethylene and propylene (column 7, lines 50-65). Taskier does not specifically disclose the microporous film made of HDPE. Ondeck teaches that the microporous film for use in battery separators is made of HDPE (example 1). Therefore, in the absence of unexpected results, it would have been obvious to one having ordinary skill in the art at the time the invention was made to substitute the HDPE for the copolymer of ethylene and propylene of the Taskier invention since two compounds have been shown in the art to recognized equivalent polymers for the microporous film useful as a battery separator.

Taskier discloses that the sequential cold stretching and hot stretching steps impart to the elastic film a unique open celled structure (column 5, lines 30-35). Taskier does not specifically disclose the microporous film containing an inorganic cavitating agent. The present invention requires the presence of inorganic particles for generation of the pores around them when the film is stretched. Therefore, it is necessary and thus obvious for the skilled artisan to look to the prior art for the presence of the inorganic cavitating agent in the microporous film. Ondeck teaches a microporous film for use in battery separator comprising an inorganic cavitating agent such as calcium carbonate (column 5, lines 35-40). The Ondeck microporous film is made of HDPE, inorganic cavitating agent, having a porosity and a thickness within the ranges disclosed in the Taskier invention. Ondeck discloses a process that is equally capable of producing the microporous film using the inorganic cavitating agent. Therefore, it would have been obvious to one having ordinary skill

in the art at the time the invention was made to substitute the process disclosed in the Ondeck invention (using the inorganic cavitating agent in the microporous film) for the process of the Taskier invention to prepare the microporous film since two processes have been shown in the art to recognized equivalent process for producing the microporous film.

Taskier does not specifically disclose the multilayer product comprising two microporous film layers. Ondeck teaches a microporous film comprising a matrix that includes porous high density polyethylene, a net work of interconnecting pores communicating throughout the porous layer and a calcium carbonate cavitating agent. Ondeck teaches the multilayer product comprising two microporous film layers (column 8, lines 65-67). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to form a multilayer product comprising two microporous film layers motivated by the desire to form a unitary structure which is capable of maintaining its length and breath dimensions.

Ondeck also teaches the multilayer product comprising three or more layers wherein at least one of the surface layers is a microporous layer (column 9, lines 1-5) and other layers are microporous or nonporous (column 8, lines 59-60). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to form a multilayer product having a structure as recited in the claims motivated by the desire to form a unitary structure which is capable of maintaining its length and breath dimensions.

Taskier discloses that the elastic film is cold stretched until porous surface regions or areas which are elongated normal or perpendicular to the stretch direction are formed and the cold stretched film is hot stretched until fibrils and pores or open cells which are elongated parallel to the stretch direction are formed (column 5, lines 8-14). Taskier does not specifically disclose the elastic film being biaxially oriented. Yagi teaches that a porous biaxially oriented film as a battery separator is formed from ethylene-alpha-olefin copolymer and has excellent tensile strength (column 3, lines 5-10). This is important to the expectation of successfully practicing the invention of Taskier and thus suggesting the modification. Therefore, in the unexpected results, it would have been obvious to one having ordinary skill in the art at the time the invention was made to form a microporous film having a biaxial orientation motivated by the desire to impact the tensile strength of the microporous film.

Allowable Subject Matter

5. Claims 1-10 are allowed. The presence of the printed image on an outer surface of the porous film structurally distinguishes the instant claims from the prior art. Those skilled in the art would not be motivated to employ a printed image on an outer surface of the hydrophilic microporous film of Taskier, which has particular application as a battery separator.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai Vo whose telephone number is (571) 272-1485.

The examiner can normally be reached on M,T,Th, F, 7:00-4:30 and on alternating Wednesdays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (571) 272-1478. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HV

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